

Response to Office Action of May 18, 2006
Application Serial No. 09/989,898
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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application. Please amend the claims as indicated below.

Listing of Claims:

1-24. (canceled)

25. (previously presented) A method for demetallizing a web to make a singular functional feature of a product unit, the singular functional feature having a desired feature thickness and composed of structures formed on each side of the web, the method comprising:

applying a first etch-resistant pattern to a first metal-containing layer of the web, the first metal-containing layer being disposed on a first surface of a substrate of the web, the first metal-containing layer being about one-half of a desired feature thickness, wherein at least a portion of the first pattern substantially defines a first part of the functional feature of the product unit;

applying a second etch-resistant pattern to a second metal-containing layer of the web, the second metal-containing layer being disposed on a second surface of the substrate opposite the first surface, the second metal-containing layer being about one-half of the desired feature thickness, wherein at least a portion of the second pattern substantially defines a second part of the functional feature of the product unit;

exposing both sides of the web to a liquid etchant to effect removal of metal-containing material from areas of the web not protected by the first and second etch-resistant patterns; and

washing the etchant from the web.

26. (original) The method of claim 25 wherein the exposing step comprises continuously passing the web in an immersed condition through a bath of liquid etchant.

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27. (original) The method of claim 25 wherein the exposing step comprises exposing the web to sprays of liquid etchant.

28. (previously presented) A method of effecting selective demetallization of a web containing a flexible substrate layer to make a singular functional feature having a desired feature thickness and composed of structures formed on each side of the substrate layer, the method comprising:

applying a first patterned layer of sodium hydroxide-resistant material to a first aluminum layer disposed on a first surface of the substrate layer, the first aluminum layer being about one-half of a desired feature thickness, wherein at least a portion of the first patterned layer substantially defines a first part of the functional feature;

applying a second patterned layer of sodium hydroxide-resistant material to a second aluminum layer disposed on a second surface of the substrate layer, the second aluminum layer being about one-half of a desired feature thickness, the second surface of the substrate layer being opposite the first surface and wherein at least a portion of the second patterned layer substantially defines a second part of the functional feature;

continuously passing the web in an immersed condition through a bath of aqueous sodium hydroxide based solution to effect removal of aluminum from areas of the web not protected by the first and second patterned layers; and

washing the first and second aluminum layers free from spent sodium hydroxide based solution.

29. (previously presented) The method of claim 25, wherein the first metal containing layer of the web and the second metal-containing layer of the web are of equivalent thickness.

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30. (previously presented) The method of claim 25, wherein the portion of the second etch-resistant pattern is applied symmetrical to and in registration with the portion of the first etch-resistant pattern.

31. (previously presented) The method of claim 25 further comprising electrically connecting the first part of the functional feature to the second part of the functional feature.